

**UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

MAX OUT GOLF, LLC,

Plaintiff,

V.

COOL CLUBS LLC, M & P GOLF, LLC,

Defendants.

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Case No. 2:15-cv-1265-JRG-RSP

LEAD CASE

JURY TRIAL DEMANDED

MAX OUT GOLF, LLC,

Plaintiff,

V.

ROGER DUNN INC., and GWNE, INC.,

Defendants and Third-Party Plaintiffs,

V.

WAWGD, INC., d/b/a FORESIGHT SPORTS,

Third-Party Defendant.

Case No. 2:15-cv-01264-JRG-RSP

CONSOLIDATED CASE

Hon. J. Rodney Gilstrap

Defendants' Claim Construction Memorandum

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The two patents at issue in this case describe the abstract idea of using sensors such as cameras to gather data about a golfer's swing, using a computer to process that data, and then directing a human being to use that data to help the golfer select golf clubs. Indeed, Plaintiff Max Out states, "that the invention contained in the Patents-in-Suit arose not through advances in software algorithms and hardware but through experience in club fitting." (Dkt. 63 at 6.) But as explained in Defendants' motion to dismiss, simply combining cameras with a generic computer and computer software that is not described anywhere in the patents is an unpatentable abstract idea in light of *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 573 U.S. ___, 134 S. Ct. 2347 (2014).¹ (See Dkt. Nos. 31, 39, 40, and 45.) Put another way, Max Out's patents computerize the well-known concept of club fitting, to which it adds a "maximum ceiling height" constraint, and lack an inventive concept.

If the Court somehow concludes that Max Out's patents claim patentable subject matter, then the Court necessarily must conclude that the patents include "something more" that transforms the abstract idea into a patentable invention. In that case, however, the patents are *still* invalid, as their claims are indefinite under 35 U.S.C. § 112(b) or (f). The patents are indefinite because they do not support or explain the elements upon which Max Out depends to provide the "something more," such as the optimization engine, as required by *Alice*.

In particular, the purported inventors relied on their claim to "optimize" the data collected and processed about a golfer's swing in order to obtain the patents-in-suit and contest Defendants' *Alice* motion. And in the '497 patent, they further relied on an "optimization engine." The problem lies in the patents' failure to explain or define the terms "optimize" and

¹ Notably, plaintiff Max Out Golf agrees that claim construction is not needed to decide whether its patents claim unpatentable abstract ideas under *Alice* (Dkt. 39 at 4 n.1), and therefore that threshold issue should be decided before the Court spends further time and resources on claim construction.

“optimization engine.” Moreover, the patents’ specification does not explain how the “launch module” works or what a “maximum ceiling height” is.

This is no accident. The purported inventors did not describe any algorithm or write any software to implement their idea. Instead, they hired a third-party, Sheldon Smilo, to write any needed code. Therefore, the inventors had nothing to disclose regarding optimization and cannot rest their invention on vague allusions to “engines” and “modules” that perform this key function. Likewise, there is no definition of “optimal.” What is optimal for one golfer may be non-optimal for another. Indeed, the inventor of the patents-in-suit and owner of Max Out makes this point in his own words:

“You’ve heard the term all the time right now, everybody, every manufacturer comes out and what do they tell you for this driver? ‘This has got the optimum launch.’ You ever seen that? I’m not making this up right? This driver has got the optimum launch. *Anybody here know what the optimum launch is? Hell I don’t know what the optimum launch is* and I’ll tell you what the deal is, okay? It depends on how much ball speed you’ve got.”

“So what’s the optimum launch angle? Tricky question.”

(Coble Decl. ¶ 15 (emphasis added).)²

For these reasons and others, Max Out Golf’s patents are either invalid because they claim unpatentable abstract ideas, or they are indefinite. By the same token, Max Out Golf’s proposed claim constructions miss the mark.

Facts

I. The Technology and Products at Issue

This case is about golf ball launch monitors. Launch monitors have become ubiquitous in golf shops and on television in recent years – if a person visits a golf store or turns on the Golf Channel, he or she will see golfers hitting balls off an artificial turf mat, with a camera or other

² Citations to the “Coble Decl.” reference the Declaration of Paul Coble in Support of Defendants’ Claim Construction Memorandum, filed contemporaneously with this Memorandum.

sensors recording golf ball launch data and a computer using that data to project the actual flight of the golf ball on a screen.



These launch monitors typically gather raw data reflecting the golf ball's launch angle, its spin direction and rate, and its launch speed. Using this data, the computer can predict the flight of the golf ball for different golf clubs with varying physical characteristics. When a person purchases new golf clubs, there is a good chance that he or she will spend a few minutes or even hours using such a launch monitor to evaluate different equipment before selecting his or her clubs. With modern computer graphics, this set-up even allows a golfer to simulate a round of golf from an indoor launch bay.

Contrary to Max Out Golf's mistaken argument that custom club fitting was not possible prior to its supposed inventions, this idea and the tools needed to implement it are not new. (Dkt. 63 at 3.)³ In 1995, Ralph Maltby published his book, "Golf Club Design, Fitting, Alteration & Repair." In that book, Mr. Maltby describes in detail all aspects of modern custom club fitting, including using a computer to ease this task. Next, on June 5, 2001, William Gobush obtained a

³ Citations to Docket No. 63 reference Max Out's opening claim construction brief. Citations to Docket No. 60 reference the parties' joint claim construction statement.

patent directed to using a computer to determine golf ball trajectories. Unlike the patents-in-suit, Mr. Gobush's patent discloses detailed formulas and algorithms used to extrapolate ball flight trajectory based on observed parameters such as launch angle, spin, and velocity. And in December 2001, Golf Digest writer Ed Weathers published an equipment review of the FocalTron GolfAchiever – a launch monitor that does everything that Mitch Voges claims to have invented years later in the patents-in-suit.

II. The Patents-in-Suit

The two patents-in-suit are directed to common launch monitors already taught in the prior art.⁴ Both patents share the same specification and are part of the same branch of a larger family tree. Beginning on January 28, 2002, Mitch Voges and Dan Hollister filed their first patent application. They later abandoned their initial application, but continued to file new applications. Eventually, on June 28, 2011, the Patent Office issued U.S. Patent No. 7,967, 695. On April 15, 2014, the Patent Office issued U.S. Patent No. 8,696,497. The '695 patent claims methods for fitting golf equipment, and the '497 patent claims systems for fitting golf equipment.

Messrs. Voges and Hollister encountered various difficulties during prosecution of the patents-in-suit. The '695 patent initially included 15 claims, but the Patent Office determined only one claim would be allowable in light of the prior art: the dependent claim that covered “selecting a maximum ceiling height for golf ball trajectory, and wherein matching the velocity with a combination of launch angle and spin rate comprises matching velocity with a combination of launch angle and spin rate determined based at least in part on the maximum ceiling height.” (Coble Decl. Ex. I.) Going forward, the applicants relied on this limitation to distinguish all claims from the prior art. (*Id.* at Ex. J.)

⁴ The Patent Office did not consider any of the above prior art references during its examination of the applications that lead to the patents-in-suit.

Messrs. Voges and Hollister filed a continuation of that application on June 27, 2011, with 16 new system claims. The Patent Office rejected all of those claims based on lack of enablement, indefiniteness, anticipation, and obviousness. (*Id.* at Ex. H.) The applicants returned to the tact that led to the ‘695 patent, cancelling most of the then-pending claims, and relying on a “maximum ceiling height” limitation to try to secure their patents. (*Id.* at Ex. F.) The applicants also argued that their optimization engine, claimed for the first time in this 2011 application, distinguished their claimed system from the prior art. (*Id.*)

III. The Asserted Claims

Each asserted claim contains common elements such as a launch monitor and a “launch module” running on a “processor.” (‘695 patent, col. 14:37-40 and 64-66 and 16:2; ‘497 patent, col. 14:47-50.)⁵ The launch module receives data from the launch monitor that it can use to determine launch angle, spin, and velocity. (‘695 patent, col. 14:40-41; ‘497 patent, col. 14:50-51 and 55-57.) Moreover, the launch module uses launch angle, spin, and velocity to extrapolate ball flight distance and trajectory. (‘695 patent, col. 14:47-53; ‘497 patent, col. 14:63-67.)

Next, the patents describe “optimizing” the launch angle, spin, and velocity. The ‘695 method patent recites achieving maximum distance and control. (‘695 patent, col. 14:42-45.) The ‘497 system patent claims an “optimization engine” that runs on a “processor” that is configured to determine “optimized” spin and launch angle to achieve an “optimal ball flight condition.” (‘497 patent, col. 14:60-63.)

⁵ Citations to the “‘497 patent” refer to U.S. Patent No. 8,696,497, attached to Max Out’s Claim Construction Memorandum as Exhibit A. (Dkt. 63-1.) Citations to the “‘695 patent” refer to U.S. Patent No. 7,967,695, attached to Max Out’s Claim Construction Memorandum as Ex. B. (Dkt. 63-2.) Citations to “Specification” refer to the column and line numbering of the ‘695 patent, but also refer to identical content in both the ‘695 patent and the ‘497 patent. The ‘497 patent and ‘695 patent share identical specifications by content, but the column and line numbering differs slightly between the specifications due to some additional priority claims (not relevant to the issues here) at the beginning of the ‘497 patent’s specification. For simplicity, Defendants cite to content in both specifications though the column and line numbers of the ‘695 patent unless otherwise indicated.

Finally, both patents describe a “maximum ceiling height” for golf ball trajectory not based on how the golfer hits the ball. (‘695 patent, col. 14:47-49 and 15:9-11; ‘497 patent, col. 14:65-67.)

IV. The Patents Do Not Explain an Optimization Engine.

Max Out’s patents rely on optimizing or an optimization engine in every claim without defining or explaining those terms anywhere in the intrinsic record. The patents, however, never explain how to optimize any data and never use the term “optimization engine” anywhere in the specification or elaborate on that term in the file history. There is a good reason for this. The evidence produced so far in this case shows that neither Mr. Voges nor Mr. Hollister invented any optimizer or optimization engine. Instead, they hired a software designer named Sheldon Smilo to write the code that would make their launch monitor work. In turn, Mr. Smilo wrote the source code and delivered it to Messrs. Voges and Hollister. (*See* Coble Decl. Ex. K.) Indeed, the applicants did not even use the term “optimization engine” in their claims until they filed their 2011 application that lead to the ‘497 patent. (*Id.* at Ex. G.)

In sum, the purported inventors did not describe any algorithms nor write the code; they were incapable of writing such code; and they certainly did not explain it in their patents. Thus, it is no accident that they did not define or explain the terms “optimization engine,” “to optimize,” or even “launch module” in their patents. The so-called inventors did not “invent” these critical elements. And their patents’ reliance on such unexplained elements renders the claims indefinite and invalid.

Applicable Law

Defendants are asking the Court to address both indefiniteness and proper claim definitions at the upcoming claim construction hearing.

I. Indefiniteness

The Court can and should deem Max Out Golf's patents invalid during the claim construction process because they are indefinite. *See Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1347 (Fed. Cir. 2005) (claim indefiniteness is a legal conclusion); *Interval Licensing, LLC*, 2012 U.S. Dist. LEXIS 187009, at *14 (W.D. Wash. Dec. 28, 2012) (indefiniteness appropriately raised and decided at claim construction), *aff'd in relevant part*, 2014 U.S. App. LEXIS 17459 (Fed. Cir. Sept. 10, 2014); *see also* the Docket Control Order (Dkt. 44 at 6) (directing the parties in this case to raise indefiniteness arguments at claim construction).

The Patent Act requires that a patent must “conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as [the] invention.” 35 U.S.C. § 112(b). Failure to meet this standard renders the claim indefinite. 35 U.S.C. § 282(b)(3)(A). To that end, the Supreme Court held in 2014 that a patent is indefinite and invalid if the “patent’s claims, read in light of the specification and the prosecution history fail to inform with reasonable certainty those skilled in the art about the scope of the invention.” *Nautilus v. Biosig*, 134 S. Ct. 2120, 2124, 2129 (2014) (rejecting the former “insolubly ambiguous” standard). The Court reasoned in *Nautilus* that a change in the indefiniteness standard was required to eliminate the incentive for patentees to inject ambiguity into their claims to the detriment of the public. *Id.* at 2129. The Court also criticized the old standard, stating that “[i]t cannot be sufficient that a court can ascribe *some* meaning to a patent’s claims[.]” *Id.* at 2130 (emphasis in original). “To tolerate imprecision just short of that rendering a claim ‘insolubly ambiguous’ would diminish the definiteness requirement’s public notice function and foster the innovation discouraging ‘zone of uncertainty[.]’” *Id.* Put simply,

the *quid pro quo* for patent protection is public notice, and the definiteness rule promotes the goal of putting the public on notice of the scope of the claims.

In addition, when an inventor takes advantage of the “means-plus-function” format allowed in 35 U.S.C. § 112(f), the inventor must disclose the structure of his or her invention in the patent’s specification for the claim to be valid. *See Medical Instrumentation & Diogs Corp. v. Elekta AG*, 344 F.3d 1205, 1211 (Fed. Cir. 2012) (holding that “if the specification is not clear as the structure that the patentee intends to correspond to the claimed function, then the patentee has not paid the price but is rather attempting to claim in functional terms unbounded by any reference to structure in the specification”).

Historically, some courts were reluctant to find that patent claims were subject to the structure disclosure requirement of section 112(f) unless they expressly used the word “means,” but that changed with the Federal Circuit’s holding in *Williamson v. Citrix Online, LLC*, 792 F.3d 1339 (Fed. Cir. 2015) (*en banc*). In *Williamson*, the court rejected the “strong presumption” that claims lacking the ritualistic “means” language were not means-plus-function claims. Instead, placing substance over form, the proper standard is whether the words of the claim are understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure. *Id.* at 1349. Claims using generic terms such as “mechanism,” “element,” or “device,” or other “nonce” terms that reflect nothing more than verbal constructs tantamount to using the word “means” because they “typically do not connote sufficiently definite structure” and therefore are governed by section 112(f). *Id.* at 1350 (finding “module” to be a nonce term). In turn, the patent’s specification must specify supporting structure in order to be valid under section 112(f).

As applied to patent claims directed to computer software, the definiteness rule requires an inventor to disclose flowcharts or algorithms underlying the claimed software invention. That is, it is not good enough to describe a program in general – such as an “optimization engine” or “launch module” – the inventor must disclose how the software works. *See e.g., EON Corp. IP Holdings LLC v. AT&T Mobility LLC*, 785 F.3d 616, 623 (Fed. Cir. 2015) (holding that a microprocessor or general purpose computer lends sufficient structure only to basic functions of a microprocessor. All other computer-implemented functions require disclosure of an algorithm).

II. Claim Construction Standards

The Supreme Court has held that claims should be construed as a matter of law. *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 372 (1996). In *Phillips v. AWH Corp.*, 415 F.3d 1303, 1317-19 (Fed Cir. 2005), the court explained the hierarchy of evidence properly used in construing claim terms, often referred to as “intrinsic” evidence (the patent claims, specification, and prosecution history) and “extrinsic” evidence (*e.g.*, expert testimony, technical treatises, and dictionaries).

Courts must start with the claims themselves, which may provide substantial guidance as to the meaning of particular claim terms. Unless the evidence indicates otherwise, the words of a claim are given their ordinary meaning. *Brookhill-Wilk I, LLC v. Intuitive Surgical, Inc.*, 334 F.3d 1294, 1298 (Fed. Cir. 2003). Moreover, the context in which a claim term is used in the asserted claims and in other claims can be highly instructive. *Phillips*, 415 F.3d at 1314-15. “The construction that stays true to the claim language and most naturally aligns with the patent’s description of the invention will be, in the end, the correct construction.” *Id.* at 1316.

Next, courts should consult the patents' specification. The specification is always highly relevant and plays an important role because the claims do not stand alone and must be read in view of the specification. *Id.* at 1315. A court must use the specification, however, for purposes of interpreting the meaning of a claim and avoid importing limitations from the specification into the claim. *Id.* at 1323.

Finally, courts should consider the prosecution history. *Id.* at 1317.

Argument

I. The Patents-in-Suit Are Invalid Because They Are Indefinite.

The Max Out patents are indefinite for two reasons.

First, the claims recite means-plus-function limitations that have no corresponding structure described in the specification. Under section 112(f), the Court first determines whether the claims are means-plus-function claims in light of *Williamson. Noah Sys., Inc. v. Intuit, Inc.*, 675 F.3d 1302, 1311 (Fed. Cir. 2012). Then, if the claims are means-plus-function claims, the Court must determine whether the specification discloses any corresponding structure that performs the claimed function. *Id.*

Second, the claims are indefinite under section 112(b) even if the Court concludes the claims do not recite means-plus-function limitations. The patents-in-suit do not explain or put the public on notice of the scope of their claims with reasonable certainty as required by *Nautilus*. In particular, they do not describe in sufficient detail what “optimization engine,” “to optimize,” “launch module,” or “maximum ceiling height” mean.

A. The software-based claim elements are means-plus-function elements that are invalid under section 112(f).

Here, the terms “optimization engine,” “to optimize,” “and “launch module” are generic or “nonce” terms like those found to be mere substitutes for the word “means” in the *Williamson*

case. Indeed, in *Williamson*, the court addressed the word “module” when it held that a “distributed learning control module” was a means-plus-function claim. *Williamson*, 799 F.3d at 1349-50. The court stated that “module is a well-known nonce word that can operate as a substitute for means” in the context of section 112(f). *Id.* at 1350. “It is simply a generic description for software or hardware that performs a specific function.” *Id.* (equating module with other nonce terms like mechanism and device); *see also Verint Sys. v. Red Box Recorders, Ltd.*, 2016 U.S. Dist. LEXIS 612, at *36-38 (S.D.N.Y. Jan. 4, 2016) (finding the claim term “analysis module” indefinite under *Williamson* because “the term ‘analysis’ imparts no structure” and “[t]he module is a black box nonce term that performs a function consistent with” the claims).

“Engine” also is akin to mechanism or device. It is non-specific, verbal construct tantamount to using the word “means” because it does not connote a definite structure.

Therefore, section 112(f) applies to the optimization engine and launch module limitations in these patents, and the patentee must point to specific structure in the specification that is linked to these claims. *See Medical Instrumentation*, 344 F.3d. at 1211. Max Out’s patents, however, lack such structure. Indeed the term “optimization engine” is not used *anywhere* in the specifications and the specifications tell us nothing about that engine. That is not surprising when one considers that the applicants wrote the specification in 2003 but did not add this claim language until April 2012. Likewise, the specification does not describe the terms “to optimize” or “module.” (*See* Dkt. 63 at 16-17 (Max Out concedes there is no definition for “optimize” in the specification).)

Max Out essentially concedes this point in its brief when explaining that its claimed invention “arose not through advances in software algorithms and hardware but through

experience in club fitting.” (Dkt. 63 at 6.) The problem is, Max Out relied on the optimization engine – *i.e.*, software – to overcome Patent Office rejections. (Coble Decl. Ex. B at 9-10, Ex. F at 13-14.) And it continues to rely on these elements when arguing that its patents include more than unpatentable abstract ideas in response Defendants’ motions to dismiss under *Alice*. (Dkt. 39 at 1, 8, 11, 13; Dkt. 45.) Max Out cannot have it both ways – distancing itself from undescribed software when convenient after relying on the very same software to obtain and defend its patents.

Max Out argues that it included a flow-chart and a drawing that satisfy the algorithm rule, but it misapplies that rule. (Dkt. 63 at 21.) The algorithm rule requires disclosure of flow charts or computer code that provides structure for the claimed software. *EON Corp.*, 785 F.3d at 623. Here, Max Out cites to a flowchart that outlines the entire club-fitting process. (Dkt. 63 at 21, citing to Fig. 3.) That chart, however, does not explain how optimization occurs. Indeed, Fig. 3 describes collecting data, has 12 boxes describing changing the golfer’s equipment, and has individual boxes labelled “derive ball flight characteristics” and “specify club parameters.” These are just black boxes that lack any instructions and provide no information about how to perform those functions, and there is no box for optimizing anything. Figure 10 is even less instructive as it is nothing more than a drawing of a computer screen. In contrast, a flow-chart that would satisfy the algorithm rule must teach a person of ordinary skill in the art how the software works. *EON Corp.*, 785 F.3d at 623-24.

The only clue Max Out provides as to how its optimization software works is found in its Appeal Brief, where it argued that “non-linear relationships between the launch angle, velocity, and spin rates are used to determine optimum ball flight characteristics for a golfer.” (Coble Decl. Ex. B at 9-10.) Despite applicants telling the Patent Office that these relationships are the

backbone for its optimization process and the critical differentiation over prior art, Max Out's patents do not disclose those relationship. In fact, the specifications and file histories fail to provide *any* information about these essential relationships other than that they are not linear.

B. The software claim elements also are indefinite and invalid under section 112(b).

Even if the Court declines to apply the means-plus-function rules to these claim terms, the claims are indefinite and invalid under section 112(b). Under *Nautilus*, the patent must make the scope of the claimed invention clear to a person of ordinary skill in the art. This public notice is the *quid pro quo* for a patent monopoly. But Max Out fails to do so here. For the sake of argument, even using Max Out's definition of a person of ordinary skill in the art – a professional golfer with knowledge of the effect of golf club swing dynamics on ball flight characteristics, and two years of club fitting experience (Dkt. 63 at 5) – such a person could not possibly know what the claimed optimization engine is, how to optimize anything, or what is really included in the launch module.⁶

The patents' and their specifications and file history offer no clue other than the obvious notion that this is all computer software. Even the Patent Office stated, "There are no details on how an optimization engine running on a processor would do this. One skilled in the art would not know how to make a processor do this." (Coble Decl. Ex. E at 6.) The Patent office further stated: "The Examiner is uncertain how an engine on a processor would determine optimized velocity, pin and launch angle to achieve a combination of maximum distance and maximum

⁶ Max Out Golf offers no evidence in favor of its purported definition of a person of ordinary skill in the art. (Dkt. 63 at 5-6.) In contrast, Defendants believe that a "POSITA" would have a degree in engineering or physics and experience designing and development club fitting systems. But, for the sake of argument and to avoid any factual disputes at this stage of the case, the Court can determine that the asserted claims are indefinite even in light of Max Out Golf's proposed POSITA definition. Indeed, the lack of technical expertise in Max Out Golf's definition makes it even more likely that a person of ordinary skill in the art would not be able to understand the scope of the asserted claims as required by Sections 112(b) and 112(f).

accuracy. There are no equations and steps to place on software to make this determination.

There are no definitions as to what is maximum distance and maximum accuracy. There are three variables and two unknowns. This problem is indeterminate.” (*Id.* at Ex. H.) While the examiner eventually withdrew his section 112 objection, the applicants never clarified their claims, and the examiner provided no explanation for caving in.

Finally, Mr. Voges conceded this point when he stated:

“You’ve heard the term all the time right now, everybody, every manufacturer comes out and what do they tell you for this driver? ‘This has got the optimum launch.’ You ever seen that? I’m not making this up right? This driver has got the optimum launch. ***Anybody here know what the optimum launch is? Hell I don’t know what the optimum launch is*** and I’ll tell you what the deal is, okay? It depends on how much ball speed you’ve got.”

“So what’s the optimum launch angle? Tricky question.”

(Coble Decl. ¶ 15 (emphasis added).)

Max Out’s own proposed constructions illustrate the open-endedness of the “optimize” limitations. Max Out defines “optimize” to mean “to make the most effective as possible,” but this raises two inexorable questions: (i) the most effective at what? and (ii) how does one of skill in the art know whether their equipment selection is “the most effective possible”? Neither Max Out nor the patents-in-suit provide any way to determine what qualifies as “the most effective as possible.” The ‘695 patent requires that the optimization must “achieve maximum distance and control.” (‘695 patent, col. 14:42-45.) How does one know whether they have selected a combination of launch angle and spin rate that provide the most effective distance and control possible? The patents-in-suit do not provide answers to these questions and a person of skill in the art is left to guess at the exact bounds of Max Out’s claimed optimization.

Either way, every asserted claim contains one or more of these terms, and these terms are indefinite under sections 112(b) and 112(f). Therefore, every asserted claim is invalid, and this case is at an end.

C. The phrase “select a maximum ceiling height” also is indefinite under section 112(b).

The phrase “select a maximum ceiling height not based on how the golfer hits the ball” also is indefinite and renders these patents invalid under section 112(b). Neither the claims nor the specification indicate how the “maximum ceiling height” should be determined. This phrase is used in just one paragraph in column 8 of the specification. (Specification at col. 8:12-29.) But that paragraph does not explain the term. Moreover, the specification concedes that the maximum ceiling *might change* from golfer to golfer depending on the altitude and standard weather conditions of the golf course that the golfer typically plays. (Specification at col. 8:26-29.) This states nothing more than “you will know it when you see it.” If this term is unexplained and admittedly changes from golfer to golfer, how can a person of ordinary skill in the art understand the scope of the claim as required by section 112(b) and *Nautilus*?

II. The Court Should Reject Max Out Golf’s Proposed Claim Constructions.

To the extent the Court construes the disputed claim terms, Max Out Golf’s definitions are overly complex and unsupported by the intrinsic evidence.

A. “Maximum Ceiling Height”

Claim Term	Max Out Golf’s Proposed Construction	Defendants’ Proposed Construction
“maximum ceiling height”	Maximum ball height for shot trajectory analysis	Indefinite under 35 U.S.C. §§ 112(2) or 116(6), or both. In the alternative, “a constraint placed on the trajectory of the ball in determining optimal ball flight conditions such that a flight path that exceeds the maximum ceiling height is considered nonoptimal”

The parties’ proposed definitions differ in one essential way. Max Out contends that the term represents nothing more than a maximum ball height.⁷ (Dkt. 60.) Defendants, however, take into account the entire phrase as used in the patent claims – “selecting a maximum ceiling height for golf ball trajectory that is not based on how the golfer hits the golf ball.” (Specification at col. 14:47-49.) This phrase entails more than a maximum ball height. In the context of the complete claim language, selecting a “maximum ceiling height” means choosing a ceiling or placing a constraint on how high the ball may go when trying to “optimize” golf equipment.

Max Out argues that its definition is “consistent” with the claim language and specification, but it never explains why. (Dkt. 63 at 9.) In contrast, additional claim language supports Defendants’ position. Each of the independent claims of both patents-in-suit requires selecting a “maximum ceiling height” for golf ball trajectory that is not based on how the specific golfer hits the golf ball. According to the patents claims, the first step in the fitting process is for the launch monitor to collect information from which certain observed parameters

⁷ Max Out Golf’s proposed definition also is impermissibly vague. Without more, “maximum ball height” is unclear and could refer to the physical height or diameter of a golf ball.” Such an ambiguity is not helpful to the trier of fact.

are computed such as launch angle, spin, and velocity as a golfer hits a golf ball. In the claimed process and system, the club fitter uses the maximum ceiling height to limit the potential combinations of “optimal” angle and spin. (Specification at col. 8:21-26) (“A trajectory model can then be used to predict the peak height a ball flies for a given launch condition, as determined in steps 302-306. A relationship that limits the launch angle and backspin for a given ball velocity so that the peak is less than [the selected maximum ceiling height] is then used when fitting the golfer with equipment.”)

The patents further instruct the equipment fitter to select a maximum ceiling height and use that ceiling to limit the acceptable trajectories that are considered optimal. (Specification at col. 8:12-29.) The fitter must match the golfer’s velocity with a combination of launch angle and spin rate to select the golfer’s equipment. In the ‘695 patent, this optimization involves maximizing distance and control. (‘695 patent, col. 14:45 and 15:3-4.) In the ‘497 patent, it involves achieving “at least one optimal ball flight condition.” (‘497 patent, col. 14:60-63.) The patents both require that the fitter use the maximum ceiling height to achieve these goals, so that term must mean more than just “maximum ball height,” it must limit the results that should be considered when selecting equipment.

The only description in the specifications for the maximum ceiling height states:

[A]n optimum launch angle and spin rate can result in a ball flight that is too high, resulting in a loss of control. Thus, a maximum ball height can be used as a ceiling for the ball flight characteristics when testing various equipment in steps 308-330. For example, a good maximum ceiling height for the ball to fly during a drive is 125 feet. So the goal can be to get as high a launch angle and as low a backspin as possible as long as the ball flight is less than 125 ft. A trajectory model can then be used to predict the peak height a ball flies for a given launch condition, as determined in steps 302-306. A relationship that limits the launch angle and backspin for a given ball velocity so that the peak is less than 125 feet is then used when fitting the golfer with equipment. It should be noted that the maximum ceiling might change from golfer to golfer depending on the altitude and standard weather conditions of the golf course that the golfer typically plays.

(Specification at col. 8:13-29.) That passage confirms that the maximum ceiling height “limits” the potential combinations of launch angle and backspin that can be considered optimal, further supporting Defendants’ definition in which this element requires a ceiling or a constraint.

(Specification at col. 8:23-26.)

Max Out’s assertion that the maximum ceiling height is merely a *factor* to be considered in determining an optimal ball flight, and not a limitation on possible optimal ball flights, defies the explicit language of the claims. (Dkt. 63 at 9.) Max Out would have the Court read the term “maximum ceiling height” as any height that is used in the trajectory analysis. (Dkt. 63 at 7.) But this construction eliminates all meaning to the words “maximum” and “ceiling.” Such a construction violates the most basic canons of claim construction. *Brookhill-Wilk*, 334 F.3d at 1298 (claim limitations are given their ordinary meaning as understood by those of ordinary skill in the art).

Indeed, there is no support anywhere in the claims, specification, or prosecution history for using the maximum ceiling height as just a “factor” of the optimal ball flight trajectory that is anything other than a limitation. (Dkt. 63 at 9.) Selecting a “maximum ceiling height for golf ball trajectory” necessarily sets a binary condition: the ball trajectory either exceeds the maximum ceiling height or it does not. Using a height merely as a *factor* in determining optimal ball flight trajectories, and not as a *constraint* to limit the potentially acceptable trajectories, strips the words “maximum” and “ceiling” of all meaning. This is confirmed by the specification describing a “maximum ceiling height” as the “peak” of the trajectory calculated by a trajectory model. (Specification at col. 8:21-26.)

Max Out’s patent prosecution position also contradicts its proposed construction. Beginning in November 2008, the applicants distinguished a prior art reference by focusing on

how their purported invention allows a person to select a golf ball trajectory in light of altitude or weather conditions through his or her equipment choice. (Coble Decl. Ex. D.) Max Out also describes one of the “key aspects” of the claims as “the ability to enforce a maximum ceiling height for the ball flight in order to avoid results that would actually result in a loss of control” in its October 18, 2010, appeal brief during prosecution of the ‘695 patent in order to distinguish a prior art reference. (*Id.* Ex. B at 3.) That cannot be done by selecting *any* ball height. That argument requires selecting a ceiling or placing a constraint on the trajectory in order to maintain control over the golf ball.

All of this boils down to an inevitable conclusion: the claims themselves show that the maximum ceiling height is not just a *factor* to be considered in determining the optimal ball trajectory, it is a *characteristic* of the optimal ball trajectory used in the rest of the claimed fitting process.

B. All forms of the verb “To Optimize”

Claim Term	Max Out Golf’s Proposed Construction	Defendants’ Proposed Construction
“optimize”	to make the most effective as possible	Indefinite under 35 U.S.C. §§ 112(2) or 112(6), or both. In the alternative, “generate and provide information based upon which the user can modify equipment to achieve maximum distance and control.”

The real difference between the parties’ definitions is that Max Out believes that the computer will select the “most effective” option. Whereas, Defendants recognize that the computer provides information by which the club fitter selects desirable golf equipment.

Max Out Golf defines “optimize” to mean “to make the most effective as possible,” but this raises to inexorable questions: (i) the most effective at what? and (ii) how does one of skill in

the art know whether his or her equipment selection is “the most effective possible?” Neither Max Out Golf nor its patents provide answers to those questions. Any number of golf pros and golf trainers would identify numerous parameters that characterize an “optimal” golf swing or golf ball trajectory. The subjective nature of such a characterization, including the non-uniformity of any such parameters that could be considered, reveals the indefinite nature of such a sweeping, unsupported, undefined term. It is just a software “black box,” and that makes the patents indefinite. In contrast, if the patents satisfy Sections 112(b) and 112(f), then this definition must be limited to what they teach – providing information that a club fitter can use to recommend clubs.

Max Out Golf even concedes that the intrinsic record provides no definition of the phrase “to optimize.” (Dkt. 63 at 16-17.) Thus, Max Out cites to a dictionary, but, notably, one issued in 2016 rather than one from 2002, the time of the purported invention. A 2016 dictionary definition is irrelevant when construing a claim term drafted in 2002. *See Globespanvirata, Inc. v. Tex. Instrument, Inc.*, 2005 U.S. Dist. LEXIS 5744, at *12 (D.N.J. Apr. 6, 2005) (citing *Brookhill-Wilk*, 334 F.3d at 1299).

In contrast, the intrinsic record supports Defendants’ position. While Max Out accuses Defendants of adding a limitation – “modifying equipment” – that is what these patents are all about. (Dkt. 63 at 20.) They are entitled, *Systems and Methods for Fitting Golf Equipment.* The patents’ abstract describes picking optimum equipment. Figures 1 and 3 contain boxes labeled “modify technology” and “specify club parameters.” The specification also supports including equipment selection in the definition. (Specification at col. 2:4-5.) Several passages expressly describe combining data with equipment selection in line with Defendants’ definition. (Specification at col. 4:25-30, 6:29 to 7:20, 8:12-29, 11:54-56 and 66-67, and 12:1-3, 39-44, and

50-55.) The following passage illustrates clearly illustrates that optimize refers to generating and providing information used to select or modify equipment as Defendants describe, “At this point, all of the information needed to fit the golfer with equipment that will result in optimum performance should be known and parameters associated with, or identifying, the optimum equipment can be derived in step 334.” (Specification at col. 8:66-67 to 9:1-2.)

Far from being superfluous as Max Out argues (Dkt. 63 at 17) or improperly importing limitations (Dkt. 63 at 20.), Defendants’ definition is supported by the intrinsic record and at least tries to give meaning to an otherwise indefinite claim in a way Max Out’s definition, “make the most effective as possible,” cannot accomplish.

C. “Optimization Engine”

Claim Term	Max Out Golf’s Proposed Construction	Defendants’ Proposed Construction
“optimization engine”	instructions that determine the most effective as possible launch angle, spin, and velocity	Indefinite under 35 U.S.C. §§ 112(2) or 112(6), or both. In the alternative, “computer software capable of generating and providing information upon which the user can modify equipment to achieve one or more optimal ball flight conditions.”

Here, Max Out adds the word “instructions” to its definition of “optimize,” signaling that this is software. Defendants begin their definition by making that point clear. Max Out also states that the instructions determine the most effective launch angle, spin, and velocity – variables not expressly included in its definition of “optimize.” In contrast, Defendants do not import limitations as accused. Instead, they place the software in the plain and obvious context of the supposed invention – selecting golf equipment.

But as explained above, the claims, the specification, and the prosecution history all fail to define this term. They offer no support for Max Out's contention that the optimization engine determines anything. Indeed, Max Out's argument demonstrates how indefinite this term is. Max Out argues that the optimization engine makes some complex calculation to derive the "most effective as possible" launch angle, spin, and velocity without any explanation of how to do so. So even if the term is not indefinite, there is no support for Max Out's definition.

To the extent the intrinsic record bears on this debate, the prosecution history rejects Max Out Golf's inclusion of launch angle, spin, and velocity in this definition. When faced with having to comment on the term "optimize" in response to a restriction requirement, on June 11, 2012, Max Out chose "distance and accuracy" and rejected parameters such as launch angle, spin, and velocity. (Coble Decl. Ex. F.)

Lacking intrinsic evidence, the court can turn to reliable extrinsic evidence such as dictionaries. *Phillips*, 415 F.3d at 1317-18. The 2002 Microsoft Computer Dictionary supports Defendants' position. In computing, an "engine" is software or hardware that can manipulate and manage data in any number of ways.

engine n. A processor or portion of a program that determines how the program manages and manipulates data. The term engine is most often used in relation to a specific use; for example, a database engine contains the tools for manipulating a database, and a Web search engine has the ability to search World Wide Web indexes for matches to one or more key words entered by the user. Compare back-end processor, front-end processor.

(Coble Decl. Ex. A, Microsoft Computer Dictionary, 5th ed. (2002), "engine".) An engine is a type of software or hardware, but it is not in itself a structure that is capable of determining the most effective launch angle, spin, or velocity without specific instruction – *i.e.* software – that is found nowhere in these patents. This is consistent with Defendants' definition of computer software capable of generating and providing information needed for custom club fitting.

D. “Launch Module”

Claim Term	Max Out Golf’s Proposed Construction	Defendants’ Proposed Construction
“launch module”	hardware, software, or combination thereof, that forms a component part of the fitting method that analyzes the launch characteristics of the golf shot	computer software capable of receiving data from a launch monitor, calculating information based on the launch data, and extrapolating ball flight information

Max Out argues that a launch module can be comprised of hardware alone. In contrast, Defendants’ definition recognizes that such a module, to the extent we know what it is, is software.

As a threshold matter, the claim language undercuts Max Out’s position.⁸ For example, claim 1 of the ’497 patent describes “a launch module running on a processor.” (’497 Patent, Col. 14-48 (emphasis added).) Similarly, the ’695 patent claims require that the launch module is capable of “using the received launch data to optimize a launch angle, velocity and spin rate relative to each other” and that “said optimizing the launch angle, velocity, and spin rate . . . [is] performed in computer having a processor.” (’695 patent, col. 14:40-42, 53-57.) In light of this claim language, Max Out’s assertion that its patents claim hardware running on hardware makes no sense.

Max Out tries to refute this logic by citing to a single claim in which the launch module element is written in the passive voice. (Dkt. 63 at 14 (citing the ’695 patent at claim 4).) While it is true that claim 4 of the ’695 patent simply describes the launch module receiving launch data without explaining where that data comes from, this argument borders on disingenuous when

⁸ Max Out Golf’s proposed construction also lacks clarity. Indeed, it is not clear whether the clause “that analyzes the launch conditions of the golf shot” modifies “fitting method” or “component part.” A court should not adopt constructions that add ambiguity. *Merck & Co. v. Teva Pharms. USA, Inc.*, 395 F.3d 1364, 1372 (Fed. Cir. 2005) (holding that a “claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so”).

claim 1 of the same patent and the independent claim of the ‘497 patent all make clear that the launch module “receives launch data from a launch monitor.” (‘695 patent, col. 14:37-38; ‘497 patent, col. 14:50.) Claim 4’s passive voice receipt of launch data does not contradict the more explicit claims. Moreover, as Max Out concedes, claim terms are normally construed consistently throughout related patents. (Dkt. 63 at 4, citing *Phillips*, 415 F.3d at 1314.)

The specification points to the same result. Max Out relies on a single sentence of the specification to support its proposed construction but, in so doing, it ignores critical language from the same passage: “launch module . . . can comprise the requisite hardware, software, or combination thereof **required to implement the functions described above.**” (Specification at col. 10:52-55.) Those functions include “using digital signal processing techniques . . . to derive the spin and launch information from the images capture [sic] by high-speed camera system.” (Specification at col. 10:29-32.) Max Out does not teach how to accomplish these functions using hardware alone. Therefore, the “launch module” must include software.

In contrast, other portions of the specification make clear that the “launch module” is comprised of software. Figure 4 shows a “launch module” along with other obvious software components such as a “swing module” and a “shaft module” – that are all connected to hardware such as cameras. The text describes software that converts observed launch data into ball flight information in line with this approach. (Specification at col. 6:34-66, 12:23-25.) Likewise, all embodiment descriptions consistently refer only to software making these calculations. (Specification at col. 10:4-36.) Finally, certain passages expressly distinguish the “software modules” from other hardware: “As mentioned, modules 408, 410 [launch module], and 412 can be implemented as software modules, possibly with associated specialized hardware interfaces within a computer system in a kiosk. (Specification at col. 13:20-23.)

The prosecution history also supports Defendants' software definition. On November 17, 2008, Mr. Voges submitted a declaration to the Patent Office in support of the '695 patent that unequivocally states that the claimed inventions are implemented by software. (Ex. D at ¶¶ 3-9.) Then, on January 27, 2011, the primary examiner required that "the structure of a processor had to be added to the claim" for the '695 patent to issue. The applicants authorized the amendments by telephone interview on January 31, 2011. If launch module included hardware, then primary examiner would not have required those amendments because the claims would have already had sufficient structure.

The Microsoft Computer Dictionary from 2002 also contradicts Max Out's position:

module n. 1. In programming, a collection of routines and data structures that performs a particular task or implements a particular abstract data type. Modules usually consist of two parts: an interface, which lists the constants, data types, variables, and routines that can be accessed by other modules or routines; and an implementation, which is private (accessible only to the module) and which contains the source code that actually implements the routines in the module. See also abstract data type, information hiding, Modula-2, modular programming. 2. In hardware, a self-contained component that can provide a complete function to a system and can be interchanged with other modules that provide similar functions.

(Coble Decl. Ex. A, Microsoft Computer Dictionary, 5th ed. (2002), "module".) The generally understood meaning of a module, as described by the Microsoft Computer Dictionary, is a dedicated set of programming instructions or routines (*i.e.*, software) or a self-contained hardware component "that can provide a complete function to a system and can be interchanged with other modules that provide similar functions." The patents-in-suit, however, do not describe any self-contained hardware component that can perform the complete functions of the launch module.

Finally, Max Out’s own infringement contentions demonstrate that this claim term, if definite, must refer to software. Throughout its contentions, Max Out equates the launch module element with solely software components of Defendants’ accused products. (Coble Decl. Ex. L.)

E. “Processor”

Claim Term	Max Out Golf’s Proposed Construction	Defendants’ Proposed Construction
“processor”	one or more circuits included in one or more devices	plain and ordinary meaning

Finally, the parties dispute the meaning of the term “processor.” Defendants advocate using its plain and ordinary meaning while Max Out attempts to construct its own definition of this term. A processor is a ubiquitous computer term understood by most lay people and certainly understood by a person of ordinary skill in designing and programming launch monitors. There is no need for a separate definition, especially not one that defies the common understanding of the term.

Max Out supports its definition with a single citation to the specification, a passage that merely states that “in one embodiment, [the processor] comprises a plurality of processing circuits.” But as Max Out itself reminds, the Court should not turn embodiments into claim limitations. (*See* Dkt. 63 at 4 (citing *Medegen MMS, Inc. v. ICU Med., Inc.*, 317 Fed. Appx. 982, 987 (Fed. Cir. 2008).) Indeed, Max Out accuses Defendants of committing the “cardinal sin of claim construction” by importing limitations from the specification into the claims rather than sticking to their “plain and ordinary meaning.” (Dkt. 63 at 2.) Therefore, the Court should reject Max Out’s attempt to import limitations into the meaning of “processor” when it suits its purposes.

In addition, Max Out's proposed definition is over broad, further demonstrating its inapplicability here. Max Out wants to define a processor as "one or more circuits included in one or more devices." A simple LED light bulb has multiple circuits – namely the light emitting diode, one or more resistors, a voltage regulator circuit, perhaps capacitors, all of which are housed in a device (the fixture). Max Out likely does not contend that LED light bulbs anticipate or satisfy the "processor" claim element. Therefore, its proposed definition is misplaced and demonstrates the dangers in trying to re-define commonly used and well-understood terms.

In contrast, the specification provides numerous examples of a general purpose computer filing the "processor" role as one might expect. (Specification at col. 13:28-39, 14:19-25.)

In sum, the patent claims, specification, and file history do not support complicating the definition of "processor" by specifying "one or more" circuits or "one or more" devices. The parties and the trier of fact know what a processor is.

Conclusion

For the reasons set forth in this Memorandum and Defendants' already-filed motion to dismiss under *Alice*, the Court should find that the patents-at-issue in this case are invalid and this case should be dismissed with prejudice. In the alternative, Defendants' respectfully request that the Court adopt their claim constructions as described above because they are consistent with the intrinsic record and reliable contemporaneous dictionaries.

Dated: May 13, 2016

Respectfully submitted,

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Certificate of Service

I, Arthur Gollwitzer III, an attorney of record in this matter, certify that on May 13, 2016, I caused a copy of the following document:

Defendants' Claim Construction Memorandum

to be filed with the Clerk of Court of the United States District Court for the Eastern District of Texas by electronic (ECF) filing, which provides service on all counsel of record by e-mail delivery, including the following counsel for plaintiff MOG and third-party defendant Foresight.

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